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Peng Zhou

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EXAMINER

BENGZON, GREG C

ART UNIT

PAPER NUMBER

2144

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/502,543	Applicant(s) ZHOU ET AL.	
	Examiner GREG BENZON	Art Unit 2144	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-9,11-17 is/are rejected.
- 7) ☒ Claim(s) 4 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This application has been examined. Claims 1-17 are pending.

Making Final

Applicant's arguments filed 05/22/2008 have been fully considered but they are not persuasive.

The claim amendments regarding -- '*VLAN ID corresponding to the user ID*'-- do not overcome the disclosure by the prior art as applied in the prior Office Action, as shown below.

The Examiner is maintaining the rejection(s) using the same grounds for rejection and thus making this action FINAL.

Priority

This application claims benefits of priority from Foreign Application 02100445.5 filed 01/30/2002 (CHINA).

The effective date of the claims described in this application is January 30, 2002.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 03/14/2008 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

Claims 4,10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including *all of the limitations of the base claim and any intervening claims.*

The Applicant is respectfully requested to review the scope of the claims in order to have claims that are parallel in scope.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3,5-9,11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukutomi (US Publication 2002/0091926) in view of Haggerty (US Patent 6331983)

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further in view of Dobbins (US Patent 5684800) as incorporated by reference in Haggerty.

Alternatively Claims rejected under U.S.C. 103(a) as being unpatentable over Haggerty (US Patent 6331983) in view of Dobbins in view of Fukutomi (US Publication 2002/0091926).

The Examiner notes that the invention is directed towards maintaining a table of VLAN ports authorized to receive multicast packets.

Fukutomi disclosed (re. Claim 1) a controlled multicast system, including an Ethernet switch and a multicast router, where the Ethernet switch connects with each host in a downlink, connects with the multicast router in an uplink, the multicast router connects with a multicast router of other systems in the uplink, the Ethernet switch implementing multicast exchange of a layer 2, an IGMP V2 protocol is adopted as group management protocol between the Ethernet switch and the host of the user; wherein the controlled multicast system further comprises:

a portal server, connecting with the multicast router and providing an interface of user access authentication; and (Fukutomi-Figure 9, '*delivery accept server*')

an authentication server, storing configuration of privilege for the host which wants to join in the multicast group; (Fukutomi-Figure 9, '*authentication server*')

the multicast router (Fukutomi-Figure 9, '*PE router*') and the authentication server adopting a Client-server structure by which the authentication server authenticates

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identification of the host to join in a multicast group with information inputted through the interface provided by the portal server, and the multicast router records a User ID and a corresponding router (Fukutomi-Figure 11, Figure 16, Paragraph 80-84, Paragraph 70) and then distributes control commands according to results of the authentication to control multicast forwarding operations of the Ethernet switch. (Fukutomi-Figure 9, 'CE router')

While Fukutomi substantially disclosed the claimed invention Fukutomi did not disclose (re. Claim 1) recording a corresponding vlan ID of the authenticated host.

Haggerty-Dobbins disclosed a multicast system implemented using IGMP messaging. (Haggerty-Column 4 Lines 55-65) Furthermore Dobbins disclosed a multicast forwarding table implemented in a VLAN Ethernet switch such that multicast packets are sent only to ports defined for a particular VLAN. (Dobbins-Column 2 Lines 50-65)

Haggerty-Dobbins disclosed (re. Claim 1) recording a corresponding vlan ID of the authenticated host. (Haggerty-Column 25 Lines 45-65, Dobbins-Column 7 Lines 20-40).

The Examiner notes that where a VLAN Ethernet switch has VLAN Ids assigned for the ports defined for that VLAN, and Fukutomi disclosed User ID's for each user on

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the VLAN Ethernet switch, it would have been obvious to a person of ordinary skill in the art to correlate the User Ids and VLAN Ids since they are well-known attributes that are used to describe users and user devices.

Fukutomi, Haggerty-Dobbins are analogous art because they present concepts and practices regarding secure multicasting using IGMP. At the time of the invention it would have been obvious to a person of ordinary skill in the networking art to combine Haggerty-Dobbins into Fukutomi. The motivation for said combination would have been to enable multicasting to VLANS. (Haggerty-Column 25 Lines 45-60).

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 2) a RADIUS+ protocol extended from a RADIUS (Remote Authentication Dial In User Service) protocol is adopted as communication protocol between the multicast router and the authentication server. (Fukutomi-Paragraph 117)

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 3) wherein the authentication server is an AAA (authorization and Authentication) server. (Fukutomi-Figure 9, *'authentication server'*)

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 5) wherein the multicast router in the system further for, after receiving an IGMP Leave message, (Haggerty-Column 31 Lines 50-65) extracting the vlan ID from the message, and obtaining corresponding entry in the multicast access privilege table via searching with the vlan ID, then deleting the address of the multicast group indicated by the IGMP Leave message in the entry; (Haggerty-Figure 13,Column 30 Lines 10-35)

after completing a routine disposal on leave messages of the host, generating a Leave message and sending to the Ethernet switch, which includes the vlan ID of the host which wants to leave the multicast group, the address of multicast group where the host wants to leave and a Leave command field;

the Ethernet switch further for, after receiving the Leave message from the multicast router, obtaining the entry through looking up the forwarding table with the MAC address corresponding to the multicast address of the multicast group, and getting the port number of the host with the vlan ID in the Leave message, and then deleting the said port number from said entry. (Haggerty-Figure 13,Column 30 Lines 40-55)

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 6) wherein the multicast router in the system further for, after knowing offline status of the host, (Haggerty-Column 29

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Lines 40-55) actively generating the Leave message and sending to the Ethernet switch; moreover terminating the multicast flow transmission.

Claims 7-9,11 are rejected on the same basis as Claims 1-3,5-6.

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 7) a method for implement a controlled multicast, comprising: A. in advance, according to ports of an Ethernet switch, classifying vlan with one vlan for each port, and linking one port to the host; making access authentication for a host which wants to join in a multicast group, if the authentication is successful, executing step B, otherwise ending; B. forwarding an IGMP Membership Report message from the host by the Ethernet switch; C. detecting whether to accept the host joining in the multicast group, if it is, generating a Join message to control establishing of an entry in a forwarding table of the Ethernet switch by a multicast router, and forwarding a multicast flow from the multicast router according to the current forwarding table by the Ethernet switch; otherwise ending.

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 8) forwarding an IGMP Leave message from the host by the Ethernet switch; generating a Leave message to control deleting the entry of the host in the forwarding table after the multicast router receives the IGMP Leave message. (Haggerty-Column 31 Lines 50-65)

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 9) actively generating the Leave message to control deleting the entry of the host in the forwarding table by the multicast router once knowing offline status of the host, and terminating the multicast flow transmission. (Haggerty-Column 31 Lines 50-65)

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 12) deleting the entry of the host in the forwarding table further comprises, if the deleted port is the solely port of the said entry in the forwarding table, further deleting the whole entry. (Haggerty-Column 24 Lines 30-45)

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 13) adopting a vlan protocol between the multicast router port and the Ethernet switch. (Dobbins-Column 3 Lines 5-15)

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 14) filtering data messages send by a multicast sender with a multicast Access Control List (ACL) through the first

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receiver among the multicast routers, and forwarding the data messages that satisfy the requirements in the ACL to the multicast tree. (Haggerty-Column 21 Lines 45-65, Fukutomi-Figure 2 , Paragraph 127)

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 15) wherein the multicast ACL comprises a command word, a source address and a group address. (Haggerty-Column 21 Lines 45-65, Fukutomi-Figure 2, Paragraph 127)

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 16) wherein the multicast ACL is distributed to each multicast router by a centralized multicast service control server; meanwhile the multicast service control server is also acts as the authentication server. (Fukutomi-Paragraph 127)

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 17) wherein the multicast ACL can also be distributed by a centralized policy server or a network manager. (Fukutomi-Paragraph 127)

Response to Arguments

Applicant's arguments filed 05/22/2008 have been fully considered but they are not persuasive.

The Applicant presents the following argument(s) *[in italics]*:

[in Fukutomi] ... the CE router is different from the Ethernet switch as known by the skilled person in the art, and in Fukutomi, one CE router is connected with one host, while in the amended claim 1, the Ethernet switch is connected with a plurality of hosts.

The Examiner respectfully disagrees with the Applicant.

Fukutomi disclosed a CE router having a LAN interface that is equivalent to an Ethernet switch.

The Examiner notes that while Fukutomi describes an embodiment wherein the CE router is connected to one host Fukutomi is not limited to this embodiment.

Furthermore there is no patentable weight given to repetition of method steps regarding establishing connections to a plurality of hosts.

The Applicant presents the following argument(s) *[in italics]*:

... Fukutomi, Haggerty and Dobbins are not analogous art, and it would have been unobvious to a person of ordinary skill in the networking art to combine Haggerty and Dobbins into Fukutomi.

The Examiner respectfully disagrees with the Applicant.

Fukutomi, Haggerty-Dobbins are analogous art because they present concepts and practices regarding secure multicasting using IGMP. At the time of the invention it would have been obvious to a person of ordinary skill in the networking art to combine Haggerty-Dobbins into Fukutomi. The motivation for said combination would have been to enable multicasting to VLANs. (Haggerty-Column 25 Lines 45-60).

The Applicant presents the following argument(s) *[in italics]*:

...Fukutomi not only fails to disclose that the multicast router records a User ID, but also obviously fails to disclose that the multicast router records a vlan ID corresponding to the User ID of the authenticated host.

The Examiner respectfully disagrees with the Applicant.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.

While Fukutomi substantially disclosed the claimed invention Fukutomi is not relied upon to disclose recording a vlan ID corresponding the User ID of the authenticated host.

Haggerty-Dobbins disclosed a multicast system implemented using IGMP messaging. (Haggerty-Column 4 Lines 55-65) Furthermore Dobbins disclosed a multicast forwarding table implemented in a VLAN Ethernet switch such that multicast packets are sent only to ports defined for a particular VLAN. (Dobbins-Column 2 Lines 50-65)

Haggerty-Dobbins disclosed (re. Claim 1) recording a corresponding vlan ID of the authenticated host. (Haggerty-Column 25 Lines 45-65, Dobbins-Column 7 Lines 20-40).

The Examiner notes that where a VLAN Ethernet switch has VLAN Ids assigned for the ports defined for that VLAN, and Fukutomi disclosed User ID's for each user on the VLAN Ethernet switch, it would have been obvious to a person of ordinary skill in the art to correlate the User Ids and VLAN Ids since they are well-known attributes that are used to describe users and user devices.

The Applicant presents the following argument(s) [*in italics*]:

... Dobbins and Haggerty disclose an End System/VLAN table established in each switch in a switched network rather than the multicast router as claimed in the amended claim 1 of the present invention.

The Examiner respectfully disagrees with the Applicant.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.

Haggerty-Dobbins is not relied upon to disclose a multicast router.

Fukutomi disclosed a multicast router as embodied by the PE router.

The Applicant presents the following argument(s) *[in italics]*:

...Fukutomi discloses that the PE multicast forwards packets to one receiver via one CE router connected with the receiver upon the receiver is authenticated successfully (Fukutomi: paragraph [0079]), rather than ...distribute control commands according to results of the authentication to control multicast forwarding operations of the Ethernet switch which then distributes packets to ports connected with the receivers which have been authenticated successfully.

The Examiner respectfully disagrees with the Applicant.

The Examiner interprets '*control commands*' as multicast commands that result in a user device receiving a multicast stream.

Fukutomi Paragraph 127-132 disclosed wherein the PE router ('*multicast switch*') determines that a user PC is authenticated to receive a multicast. Where the PE router allows a user PC to receive a multicast then the PE router would have been required to send a multicast JOIN command or its equivalent to the CE router ('*Ethernet switch*') in order for said user PC to receive the multicast stream as disclosed by Haggerty-Column 8 Lines 15-25, Figure 17.

The Applicant presents the following argument(s) [*in italics*]:

...in amended claim 1 of the present invention, the User ID and the Vlan ID corresponding to the User ID are at least employed to find a User ID according to the Vlan ID so as to authenticate a host which wants to join in a multicast group...

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *find a User ID according to the Vlan ID*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

The Applicant presents the following argument(s) [*in italics*]:

Fukutomi does not disclose the feature "each port through which the host is connected to the Ethernet switch is a vlan port" as claimed in claim 4 of the present invention. Fukutomi discloses PE router ports (See Fukutomi-FIG 16). However, the PE router ports are different from vlan ports of the Ethernet switch, because the PE router corresponds to the multicast router instead of Ethernet switch of the present invention.

The Examiner respectfully disagrees with the Applicant.

The Examiner respectfully request the Applicant to clarify the statement above. The limitation in question is regarding the CE router ('*Ethernet switch*') and the User PC ('*receiver host*') only and has nothing to do with the PE router ('*multicast switch*').

Conclusion

Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures

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may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Bengzon whose telephone number is (571) 272-3944. The examiner can normally be reached on Mon. thru Fri. 8 AM - 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on (571)272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul H Kang/
Primary Examiner, Art Unit 2144

/G. B./
Examiner, Art Unit 2144